

CLAIMS

What is claimed is:

- 1 1. A method of remotely detecting vulnerabilities on a local computer,  
2 comprising:  
3 a) installing an agent on a local computer;  
4 b) receiving encrypted commands for executing a risk-assessment scan from a  
5 remote computer utilizing a network;  
6 c) decrypting the commands on the local computer utilizing the agent;  
7 d) processing the commands on the local computer utilizing the agent; and  
8 e) performing the risk-assessment scan on the local computer in accordance  
9 with the processed commands to remotely detect local vulnerabilities on the  
10 local computer.
- 1 2. The method as recited in claim 1, wherein the agent includes a plurality of  
2 risk-assessment modules.
- 1 3. The method as recited in claim 2, wherein the commands execute the risk-  
2 assessment modules in a specific manner that is configured at the remote  
3 computer.
- 1 4. The method as recited in claim 2, wherein the risk-assessment modules are  
2 selected for the agent based on specifications of the local computer.
- 1 5. The method as recited in claim 2, wherein the risk-assessment modules  
2 include a STAT module for performing a stat system call on a file, a READ  
3 module for reading a file, a REaddir module for returning contents of a  
4 directory, a FIND module for locating a list of files based on a given  
5 function, a GETPWENT module for retrieving an entry from a password

6 database, a GETGREN module for retrieving an entry from a group  
7 database, a CHKSUM module for performing a checksum operation on a file,  
8 and an EXEC module for executing a command.

1 6. The method as recited in claim 2, wherein the risk-assessment modules are  
2 selected from the group consisting of a STAT module for performing a stat  
3 system call on a file, a READ module for reading a file, a REaddir module  
4 for returning contents of a directory, a FIND module for locating a list of  
5 files based on a given function, a GETPwENT module for retrieving an  
6 entry from a password database, a GETGREN module for retrieving an  
7 entry from a group database, a CHKSUM module for performing a checksum  
8 operation on a file, and an EXEC module for executing a command.

1 7. The method as recited in claim 1, wherein the commands each indicate at  
2 least one of the risk-assessment modules.

1 8. The method as recited in claim 7, wherein the commands are processed by  
2 extracting parameters associated with the commands, and executing the risk-  
3 assessment modules indicated by the commands utilizing the associated  
4 parameters.

1 9. The method as recited in claim 1, and further comprising transmitting results  
2 of the risk-assessment scan from the local computer to the remote computer  
3 utilizing the network.

1 10. The method as recited in claim 9, and further comprising receiving feedback  
2 to the results from the remote computer utilizing the network.

1 11. The method as recited in claim 1, wherein the commands are decrypted  
2 utilizing a shared key.

- 1 12. A computer program product of remotely detecting vulnerabilities on a local  
2 computer, comprising:
- 3 a) computer code for installing an agent on a local computer;
- 4 b) computer code for receiving encrypted commands for executing a risk-  
5 assessment scan from a remote computer utilizing a network;
- 6 c) computer code for decrypting the commands on the local computer utilizing  
7 the agent;
- 8 d) computer code for processing the commands on the local computer utilizing  
9 the agent; and
- 10 e) computer code for performing the risk-assessment scan on the local computer  
11 in accordance with the processed commands to remotely detect local  
12 vulnerabilities on the local computer.
- 1 13. The computer program product as recited in claim 12, wherein the agent  
2 includes a plurality of risk-assessment modules.
- 1 14. The computer program product as recited in claim 13, wherein the  
2 commands execute the risk-assessment modules in a specific manner that is  
3 configured at the remote computer.
- 1 15. The computer program product as recited in claim 13, wherein the risk-  
2 assessment modules are selected for the agent based on specifications of the  
3 local computer.
- 1 16. The computer program product as recited in claim 13, wherein the risk-  
2 assessment modules include a STAT module for performing a stat system  
3 call on a file, a READ module for reading a file, a READDIR module for  
4 returning contents of a directory, a FIND module for locating a list of files  
5 based on a given function, a GETPWENT module for retrieving an entry  
6 from a password database, a GETGRENT module for retrieving an entry

7 from a group database, a CHKSUM module for performing a checksum  
8 operation on a file, and an EXEC module for executing a command.

1 17. The computer program product as recited in claim 13, wherein the risk-  
2 assessment modules are selected from the group consisting of a STAT  
3 module for performing a stat system call on a file, a READ module for  
4 reading a file, a READDIR module for returning contents of a directory, a  
5 FIND module for locating a list of files based on a given function, a  
6 GETPWENT module for retrieving an entry from a password database, a  
7 GETGENT module for retrieving an entry from a group database, a  
8 CHKSUM module for performing a checksum operation on a file, and an  
9 EXEC module for executing a command.

1 18. The computer program product as recited in claim 12, wherein the  
2 commands each indicate at least one of the risk-assessment modules.

1 19. The computer program product as recited in claim 18, wherein the  
2 commands are processed by extracting parameters associated with the  
3 commands, and executing the risk-assessment modules indicated by the  
4 commands utilizing the associated parameters.

1 20. The computer program product as recited in claim 12, and further comprising  
2 computer code for transmitting results of the risk-assessment scan from the  
3 local computer to the remote computer utilizing the network.

1 21. The computer program product as recited in claim 20, and further comprising  
2 computer code for receiving feedback to the results from the remote  
3 computer utilizing the network.

1 22. The computer program product as recited in claim 12, wherein the  
2 commands are decrypted utilizing a shared key.

- 1 23. A system of remotely detecting vulnerabilities on a local computer,  
2 comprising:
- 3 a) an agent installed on a local computer for receiving encrypted commands for  
4 executing a risk-assessment scan from a remote computer utilizing a  
5 network, decrypting the commands on the local computer, and processing the  
6 commands on the local computer; and
- 7 b) wherein the risk-assessment scan is performed on the local computer in  
8 accordance with the processed commands to remotely detect local  
9 vulnerabilities on the local computer.
- 1 24. A system of remotely detecting vulnerabilities on a local computer,  
2 comprising:
- 3 a) means for installing an agent on a local computer;
- 4 b) means for receiving encrypted commands for executing a risk-assessment  
5 scan from a remote computer utilizing a network;
- 6 c) means for decrypting the commands on the local computer utilizing the  
7 agent;
- 8 d) means for processing the commands on the local computer utilizing the  
9 agent; and
- 10 e) means for performing the risk-assessment scan on the local computer in  
11 accordance with the processed commands to remotely detect local  
12 vulnerabilities on the local computer.
- 1 25. A method of remotely detecting vulnerabilities from a remote computer,  
2 comprising:
- 3 a) sending encrypted commands from a remote computer to an agent on a local  
4 computer for executing a risk-assessment scan utilizing a network, the  
5 commands adapted for being decrypted and processed on the local computer  
6 utilizing the agent for performing the risk-assessment scan on the local

- 7 computer in accordance with the processed commands to remotely detect  
8 local vulnerabilities on the local computer;  
9 b) receiving results of the risk-assessment scan from the local computer  
10 utilizing the network; and  
11 c) transmitting feedback to the results from the remote computer to the local  
12 computer utilizing the network.

- 1 26. A computer program product of remotely detecting vulnerabilities from a  
2 remote computer, comprising:  
3 a) computer code for sending encrypted commands from a remote computer to  
4 an agent on a local computer for executing a risk-assessment scan utilizing a  
5 network, the commands adapted for being decrypted and processed on the  
6 local computer utilizing the agent for performing the risk-assessment scan on  
7 the local computer in accordance with the processed commands to remotely  
8 detect local vulnerabilities on the local computer;  
9 b) computer code for receiving results of the risk-assessment scan from the  
10 local computer utilizing the network; and  
11 c) computer code for transmitting feedback to the results from the remote  
12 computer to the local computer utilizing the network.

- 1 27. A method of remotely detecting vulnerabilities on a local computer,  
2 comprising:  
3 a) installing an agent on a local computer, the agent including a plurality of  
4 risk-assessment modules selected based on at least one aspect of the  
5 computer;  
6 b) receiving encrypted commands for executing a risk-assessment scan from a  
7 remote computer utilizing a network;  
8 c) decrypting the commands on the local computer utilizing the agent;  
9 d) authenticating the commands on the local computer utilizing the agent;

- 10 e) processing the commands on the local computer utilizing the agent, the
- 11 commands adapted to execute the risk-assessment modules in a specific
- 12 manner that is configured at the remote computer;
- 13 f) performing the risk-assessment scan on the local computer in accordance
- 14 with the processed commands to remotely detect local vulnerabilities on the
- 15 local computer;
- 16 g) transmitting results of the risk-assessment scan from the local computer to
- 17 the remote computer utilizing the network;
- 18 h) receiving feedback to the results from the remote computer utilizing the
- 19 network.

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